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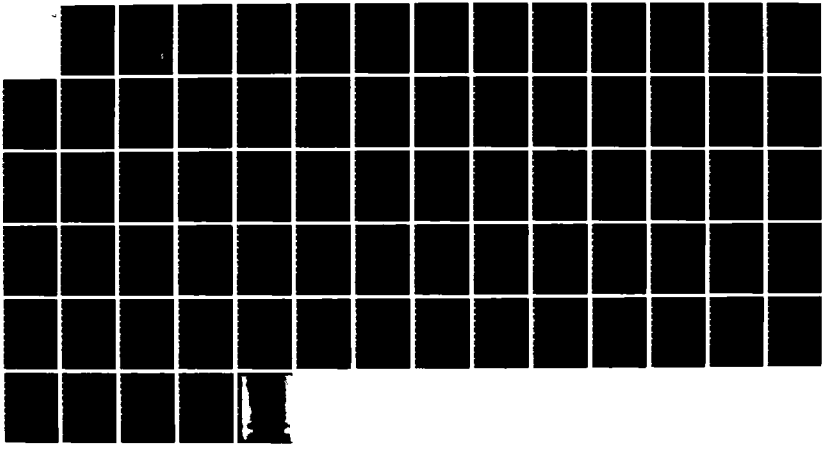

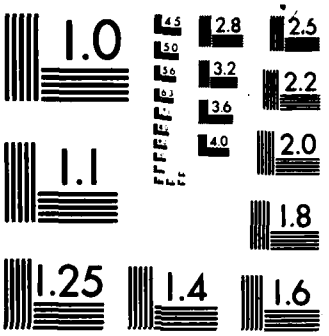

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PEACETIME ENERGY EMERGENCY REPORTING SYSTEM: SYSTEM SPECIFICATION

November 1983

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PREFACE

This document presents the system design specification for a peacetime energy emergency reporting system. The system has been developed for the Office of the Deputy Assistant Secretary of Defense for Logistics and Materiel Management, and specifically for the Defense Energy Policy Office, which is responsible for the implementation of Department of Defense (DoD) energy policy.

This emergency reporting and information system will provide DoD management with the information to respond to large-scale peacetime energy disruptions. (There is currently no system to assess the severity of peacetime energy disruptions for the DoD.) The system will operate in a manner similar to the existing Defense Energy Information System and would be invoked as required during an emergency. Data reporting would be limited to those installations and commodities affected by the emergency. The system provides: 1) coverage of petroleum and non-petroleum products, fuel types, 2) retail and wholesale supply data, 3) timely reporting for emergency situations, 4) requirements data reporting, and 5) analysis and report capabilities. It will be used by the Defense Energy Policy Office, Service energy offices, and Service Control Points.

This System Design Specification describes the system functions, data requirements, operating environment, and design details of the Peacetime Energy Emergency Reporting System (PEERS). It serves as the guide for the persons who will program PEERS and adheres to the requirements for System Specifications in the "Automated Data Systems Documentation Standards," Department of Defense (OASD-Comptroller), 7935.1-S, September 1977.

TABLE OF CONTENTS

		Page
PREFACE		ii
LIST OF TABLES		v
LIST OF FIGURES		vi
Section		
1.	GENERAL	1- 1
1.1	Purpose of the System Specification	1- 1
1.1.1	Purpose and Scope	1- 1
1.1.2	Functions and Capabilities	1- 2
1.2	Project References	1- 3
1.2.1	Logistics Management Institute Documentation	1- 3
1.2.2	Other Related References	1- 4
1.3	Terms and Acronyms	1- 4
1.3.1	Terms	1- 4
1.3.2	Acronyms	1- 5
2.	SUMMARY OF REQUIREMENTS	2- 1
2.1	System Description	2- 1
2.2	System Functions	2- 2
2.2.1	Generate PEERS Header File	2- 2
2.2.2	PEERS Data Collection	2- 5
2.2.3	Edit and Convert Data	2- 5
2.2.4	Update Data Base	2- 6
2.2.5	Generate Ad Hoc Reports	2- 7
2.2.6	Delete Outdated Data	2- 7
2.3	Accuracy and Validity	2- 8
2.3.1	Manual Procedures	2- 8
2.3.2	Data Transmission	2- 8
2.3.3	Automated Edits and Calculations	2- 8
2.3.4	Scheduling and Timing	2- 9
2.4	Flexibility	2-10

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Table of Contents (Cont.)

Section			Page
3.	ENVIRONMENT		3- 1
	3.1	Equipment Environment	3- 1
	3.2	Support Software Environment	3- 2
	3.3	Interfaces	3- 2
		3.3.1 Interface with DEIS	3- 2
		3.3.2 Interface with DLA	3- 3
	3.4	Security and Privacy	3- 3
	3.5	Controls	3- 4
4.	DESIGN DETAILS		4- 1
	4.1	General Operating Procedures	4- 1
		4.1.1 Data Requirements	4- 1
		4.1.2 System Scheduling Requirements	4- 2
		4.1.3 Data Base Back-up Procedures	4- 2
		4.1.4 Recovery Procedures	4- 4
		4.1.5 Access to DEIS Data	4- 4
		4.1.6 Data Monitoring	4- 4
	4.2	System Logic Flow	4- 4
	4.3	System Data	4- 6
		4.3.1 Inputs	4- 7
		4.3.2 Outputs	4- 7
		4.3.3 Data Base	4- 7
	4.4	System Program Descriptions	4- 8
		4.4.1 Generate PEERS Header File	4- 8
		4.4.2 Edit and Convert Data	4-11
		4.4.3 Update Data Base	4-19
		4.4.4 Generate Ad Hoc Reports	4-22
		4.4.5 Delete Outdated Data	4-23

APPENDIX A Data Dictionary

APPENDIX B Data Collection Card Formats

APPENDIX C Coded Data Base Items

LIST OF TABLES

		Page
4- 1	PEERS Processing Cycle	4- 3
4- 2	Data Edit Items	4-15
4- 3	Data Base Update Data Items	4-22
A- 1	PEERS Product Data	A- 2
A- 2	PEERS Header Data	A- 3
B- 1	PEERS - MEC-2 Card Layout	B- 2
B- 2	PEERS - MEC-3 Card Layout	B- 3
C- 1	Coded Data Base Items	C- 2
C- 2	Region/State/Country Codes	C- 3
C- 3	Service/Agency Codes	C- 7
C- 4	Petroleum Product Codes	C- 8
C- 5	Utility Product Codes	C- 9

LIST OF FIGURES

		Page
2- 1	Organizational Responsibilities for PEERS Data	2- 3
2- 2	PEERS System Flow	2- 4
4- 1	PEERS System Flow	4- 5
4- 2	PEERS Data Base Schema	4- 8
4- 3	Generate PEERS Header File	4-10
4- 4	PEERS Edit and Convert Data	4-12
4- 5	Accepted Records Listing	4-18
4- 6	PEERS Activities Not Reporting	4-20
4- 7	PEERS Error Statistics	4-21
4- 8	Sample Ad Hoc Reports	4-24
4- 9	Delete Outdated Data	4-26

SECTION 1. GENERAL

1.1 Purpose of the System Specification.

This System Specification for a peacetime energy emergency reporting system is written for the Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics (OASD(MRA&L)), to fulfill the following objectives:

- to provide detailed definition of system functions
- to communicate details of the ongoing analysis to appropriate operational and development personnel
- to define in detail interfaces with other systems and subsystems and the facilities to be used for accomplishing those interfaces.

In this document, the system will be referred to as the Peacetime Energy Emergency Reporting System (PEERS).

1.1.1 Purpose and Scope.

The purpose of this System Specification is to specify the PEERS system design. It is written using the "Automated Data Systems Documentation Standards," Department of Defense (OASD-Comptroller), 7935.1-S, September 1977, as a guideline and contains the following sections:

- Section 1--General Information. This section provides an introduction to PEERS, a list of related reference documents, and a list of terms and acronyms used in the document.
- Section 2--Summary of Requirements. This section presents a general description of PEERS and specifies how its functions satisfy the operational requirements goals. This section also specifies system performance in the areas of accuracy and validity of data, scheduling and timing, and system flexibility.
- Section 3--Environment. This section describes the equipment, support software, and system interfaces of the PEERS environment.
- Section 4--Design Details. This section specifies the PEERS design details. It includes system functional capabilities, design approach

and logic flow, processing required to support each function, definition of the inputs and outputs for each function, and the computer program flow of each function.

1.1.2 Functions and Capabilities.

PEERS is a "standby" emergency reporting and information system which will provide DoD management with the information to respond to large-scale peacetime energy disruptions. It will operate in a manner similar to the existing Defense Energy Information System (DEIS) and would be invoked as required during an emergency. Data reporting can be limited to those installations and energy products affected by a particular emergency. The system will provide:

- Coverage of Petroleum and Non-Petroleum Products. PEERS will contain inventory and consumption data for the bulk petroleum products covered by DEIS-I and the utility energy products covered by DEIS-II. Data will be collected only for those products in short supply during an emergency.

- Retail and Wholesale Visibility. PEERS will collect and report energy supply and demand data from over 1,400 DoD retail and wholesale locations.

- Timely Reporting. PEERS will have the capability to collect and report data as required, weekly, biweekly, daily, etc.

- Essential Data Elements. PEERS will include inventory, anticipated receipts, and consumption data from each reporting location for each product of concern.

- Powerful Analysis and Report Capabilities. PEERS will use the same data base management system (DBMS) as DEIS. This generalized DBMS will provide extensive analytical capabilities to generate reports tailored to a particular emergency.

PEERS will be used by the Defense Energy Policy Office, Service energy offices, and Service Control Points (for petroleum). Its reports will be used to assess the severity of energy shortages, provide feedback on energy conservation efforts, and answer Congressional and Department of Energy information requests.

1.1.2.1 Organizational Responsibilities.

The Defense Energy Policy Office, under the Deputy Assistant Secretary of Defense (DASD) for Logistics and Materiel Management (L&MM), Energy and Transportation (ET), has overall project management responsibility for PEERS. The Defense Energy Data Analysis Panel (DEDAP) includes the Services and provides a forum for discussion of energy management information needs.

The Air Force Data Services Center (AFDSC) will provide programming, implementation, and operational support for the PEERS functions in this System Specification. The Management Information and Analysis Division of the Office of the Comptroller, Defense Fuel Supply Center (DFSC-CB), will be the PEERS system operator.

1.1.2.2 Software Capabilities.

PEERS is designed to function within the current DEIS data collection and reporting environment although the data processing system will be new. PEERS software capabilities will include the initial generation of header information and tables from DEIS-I and DEIS-II data bases, data edit, input, loading and maintenance of the PEERS data base, and production of standard and ad hoc energy reports.

1.2 Project References.

PEERS is designed to be very similar to DEIS so as to use existing files and processing flows. Consequently, this design specification draws heavily on previous DEIS studies and design documents. Only the more recent and pertinent documents are cited here; a more complete summary of the references applicable to the history and development of DEIS is contained in the DEIS System Design Specification: "Defense Energy Information System (DEIS): DEIS-80 System Design Specifications," Logistics Management Institute, DP103, July 1982.

1.2.1 Logistics Management Institute Documentation.

"Defense Energy Information System (DEIS): Recommended Design Modification," Logistics Management Institute, ML809, June 1979.

"Defense Energy Information System (DEIS): Current System Documentation," Logistics Management Institute, ML917, March 1980.

"Defense Energy Information System (DEIS): DEIS-80 System Design Specification," Logistics Management Institute, DP103, July 1982.

"Peacetime Energy Emergency Reporting System," Logistics Management Institute, Memorandum Report ML301, August 1983.

1.2.2 Other Related References.

"Defense Energy Information System," Department of Defense, DoD 5126.46-M, December 21, 1982.

"Automated Data Systems Documentation Standards," Department of Defense, (OASD-Comptroller), 7935.1-S, September 13, 1977.

1.3 Terms and Acronyms.

The following terms and acronyms have been used in this report.

1.3.1 Terms.

Back-Up Copy: A copy of a file or data set that is kept for reference in case the original file or set is destroyed.

Back-Up Procedures: Procedures which allow systems to be restored and interrupted processing to resume while maintaining system integrity.

Batch Processing: Pertaining to the control technique of grouping computer programs or data for input to a computer system for handling at the same time.

Data Base: The collection of computer-stored data which is accessed by a processing system and is fundamental to the performance of the capabilities of that system.

Data Base Administrator: The person responsible for the efficient organization and operation of the data base.

Data Element: A group of characters that specify an item, for instance, "month." A data element contains no subordinate items.

File: One or more records concerning places or things that are closely related and handled together for processing.

Function: One of several individual processes performed by a computer program, for instance, sorting a data base.

Interactive Processing: Pertaining to processing in which each entry elicits a response.

Macro: A single computer instruction that represents a sequence of computer commands. Macros allow a user to execute a sequence of complex computer instructions with a single command.

On-Line: (1) Pertaining to equipment or devices under control of the computer; (2) Pertaining to a user's ability to give the computer instructions and receive output without delay. Interactive processing is one type of on-line activity.

Query: A request for specific data during interactive processing. The request involves selecting specified data and manipulating it by sorting, summary, etc.

Record: A set of data elements closely related in the sense that they pertain to the same place or thing. An example is a "DoDAAC product record", which contains consumption information about a particular product at one DoD activity.

Software: Computer programs or routines prepared by computer professionals to simplify and facilitate the use of the computer.

Subsystem: A coordinated group of components which form a secondary or subordinate system usually capable of operating independently of, or asynchronously with, a controlling system.

System: A coordinated organization of people, hardware, methods and procedures that operate together to achieve a predetermined set of objectives.

1.3.2 Acronyms.

AFDSC	-	Air Force Data Services Center
ASD(MRA&L)	-	Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics)
DASD(L&MM)	-	Deputy Assistant Secretary of Defense (Logistics and Materiel Management)
DBA	-	Data Base Administrator
DBMS	-	Data Base Management System
DEDAP	-	Defense Energy Data Analysis Panel

DEIS	-	Defense Energy Information System
DEIS-I	-	Petroleum Products Portion of DEIS
DEIS-II	-	Utility Energy Usage Portion of DEIS
DFSC	-	Defense Fuel Supply Center
DFSC-CB	-	DFSC, Office of Comptroller, Management Information & Analysis Division
DLA	-	Defense Logistics Agency
DoD	-	Department of Defense
DoDAAC	-	DoD Activity Address Code
OASD	-	Office of the Assistant Secretary of Defense
PEERS	-	Peacetime Energy Emergency Reporting System

SECTION 2. SUMMARY OF REQUIREMENTS

The design of PEERS is based on the requirements identified in the "Peacetime Energy Emergency Reporting System," Logistics Management Institute, Memorandum Report ML301, August 1983. It also draws heavily on the DEIS procedures and capabilities detailed in "Defense Energy Information System (DEIS): DEIS-80 Design System Specification," Logistics Management Institute, DP103, July 1982. This section describes PEERS, its functions, and its performance requirements.

2.1 System Description.

PEERS is a "standby" emergency reporting and information system which will provide DoD management with the information to respond to large-scale peacetime energy disruptions. It will operate in a manner similar to the existing DEIS and would be invoked as required during an emergency. Data reporting can be limited to those installations and energy products affected by the emergency.

The system will provide inventory and consumption data for petroleum and non-petroleum products such as natural gas and electricity and visibility of both retail and wholesale installations. PEERS is designed to function within the current DEIS data collection and reporting environment although the data processing system will be new. PEERS data will be transmitted to DLA using AUTODIN or the DoD message communication system. Revised instructions and formats will be published as an addendum to the DEIS User's Manual (DoD 5126.46-M).

PEERS will use the same DBMS (INQUIRE[1]) used in DEIS. INQUIRE allows non-programmers to "query" the data base, that is, to extract selected DEIS data that was previously stored. The ability to create queries and receive timely responses is essential to management of an emergency. PEERS will be used by the Defense Energy Policy Office, Service energy offices, and Service Control Points (for petroleum). Its reports will be used to assess the severity of energy shortages, provide feedback on energy conservation efforts, and answer Congressional and Department of Energy information requests.

The Defense Energy Policy Office has overall project management responsibility for PEERS. The AFDSC will provide programming, implementation, and operational support for the development of PEERS. DFSC-CB, the DEIS system operator, will also be the PEERS system operator. Figure 2-1 shows the organizational responsibilities for these PEERS functions.

2.2 System Functions.

This subsection addresses both the manual and automated functions designed to meet PEERS requirements. Each of the automated functions will be described in greater detail in Section 4. The following functions are displayed in the system flowchart in Figure 2-2. The subsection numbers, where applicable, are noted on the flowchart.

2.2.1 Generate PEERS Header File.

Upon invocation of PEERS, the Defense Energy Policy Office will provide criteria for selecting the DoD activities required to report. From these selection criteria (e.g., all DoDAACs in California), a header file will be generated from the DEIS-I and DEIS-II header files, using the INQUIRE query language. This file will contain a header record for each DoDAAC selected to

[1]INQUIRE was developed and is maintained and copyrighted by Infodata Systems, Inc., Falls Church, VA. The AFDSC has purchased it.

FIGURE 2-1. ORGANIZATIONAL RESPONSIBILITIES FOR PEERS DATA

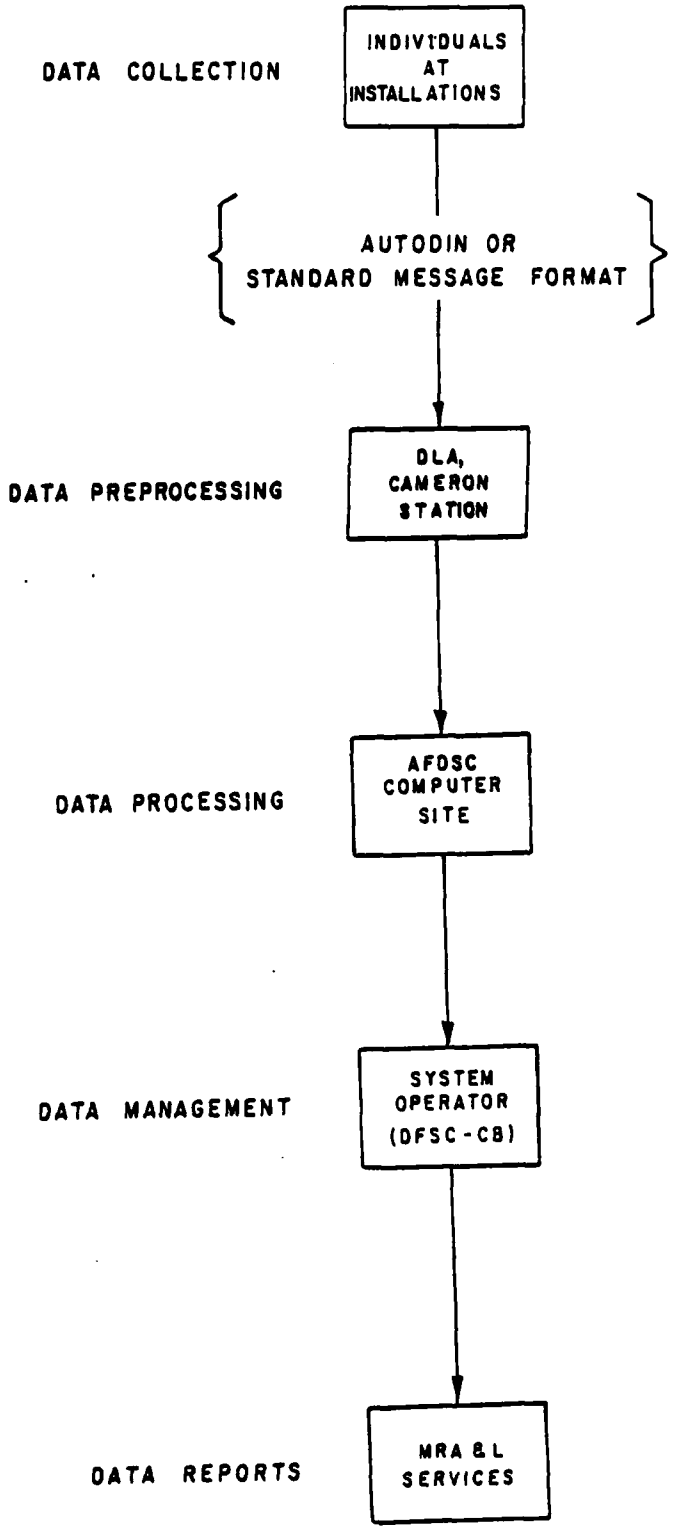
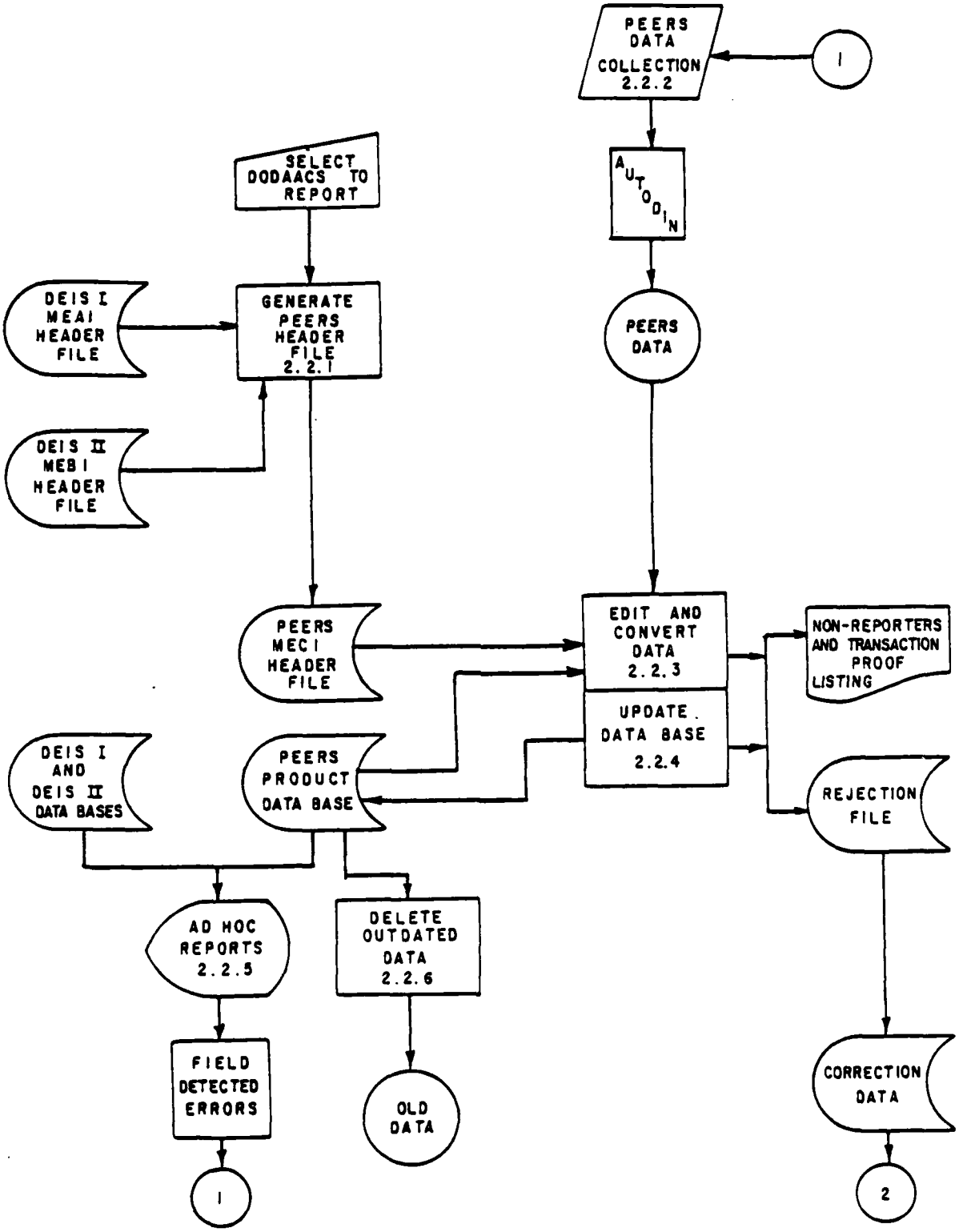


FIGURE 2-2. PEERS SYSTEM FLOW



report. The format of this header record will be identical to that used in DEIS-I and DEIS-II (see Appendix A for the definitions and format of the header data elements).

2.2.2 PEERS Data Collection.

When PEERS is invoked, the Defense Energy Policy Office, in conjunction with the Services, will specify: 1) when PEERS reporting is to commence, 2) which DoD activities will report, 3) the products to be reported, and 4) the frequency of the required reports. The selected DoD activities will collect and transmit the required data directly to DLA using AUTODIN or the DoD message communication system. Appendix B contains the card layouts for each of the input forms.

2.2.3 Edit and Convert Data.

PEERS data will be collected and reported to DLA over the AUTODIN system. They will be separated from DEIS data and other traffic at DLA and written to a PEERS data file.

All data will be edited. The edits will include checks for missing data, correct format, and form (alphabetic or numeric). Data items passing the edits will be added to the data base. Records containing data items which fail the edits will be placed on a Rejection File. Outputs from the edit function will be: 1) a list of records with possible errors, and a list of activities not reporting or reporting significantly different product usage; 2) a Rejection File containing erroneous, out-of-date, or questionable data; and 3) an Update File (or data base) containing accepted records. Error statistics will be collected and reported to the system operator (DFSC-CB).

PEERS will provide the capability to correct and resubmit records on the Rejection File, to change items in the data base, and to submit new data records for editing and updating the data base. All on-line corrections and

updates will be entered on the Correction File for re-editing before data base updating.

2.2.4 Update Data Base.

The PEERS capability to process and verify potentially large amounts of data will be obtained through use of a generalized DBMS. There are no programming requirements for developing the DBMS, since INQUIRE will be used. INQUIRE has the following capabilities and features:

- multiple user on-line access
- host language interface to the programming language to be used for applications programs
- restart/recovery procedures for system crashes
- ability to add new data fields (non-keyed) to existing data base records
- batch update capabilities via host language program
- on-line query and report generation capabilities.

The actual data base update will be performed through the generalized DBMS capabilities and will apply records with correct data to the data base. Such features of the DBMS as the ability to log updates automatically and create a Rejection File of records thought to be in error will also be used in conjunction with the data base update.

In the future, the need to add or delete new data files or otherwise reorganize the data base may occur. The features of the DBMS will permit such updating, should it become necessary.

2.2.5 Generate Ad Hoc Reports.

Obviously, PEERS will not produce a series of standard reports on a regularly scheduled basis. Reports specifically tailored to an emergency can rapidly be prepared using the query language capability of the DBMS. They can be accessed, using an on-line computer terminal, by the Services, MRA&L(L&MM),

and others as specified by the Defense Energy Policy Office. In addition, all data in the PEERS data base will be accessible to authorized users for generation of special, one-time, or new reports (i.e., ad hoc reports). Through use of the generalized DBMS, the report generation function will provide an easy-to-use, interactive capability to access, retrieve, format, and print data. Interface to data reduction and statistical functions will also be provided. The final output will be directed to the terminal originating the request or to a specified hard-copy printer as the requester chooses. The requester may also choose to save the symbolic language statements which comprise a report request so that the same report or a modified version may be requested later with minimal effort.

2.2.6 Delete Outdated Data.

The PEERS on-line data base will consist of report data for the most recent five weeks. This will provide at least a one-week overlap with the most recent DEIS report. There is no need to retain any PEERS reports beyond five weeks, since the same information will be maintained in even greater detail in the DEIS data base. Thus, the on-line data base will be updated periodically, and the outdated data will be deleted using the INQUIRE programs and procedures.

2.3 Accuracy and Validity.

There will be several ways to ensure the accuracy and validity of PEERS data. Manual procedures and controls similar to those used in DEIS will increase the likelihood of complete and accurate data being collected and recorded for all reporting DoD activities. Data transmission errors will be minimized through the use of AUTODIN (specifically AUTODIN-I). A number of syntax, format, and value edits will be performed by the automated system when new transactions are added to the data base. A final, manual check on the

data will be performed by persons who will inspect and evaluate the results of the submissions.

2.3.1 Manual Procedures.

PEERS data collection procedures will be specified in an addendum to DoD 5126.46-M instructions. PEERS will use the same reporting channels as DEIS, and the PEERS data elements are a subset of the DEIS data elements. Thus, the PEERS reporters will be familiar with definitions and procedures for reporting. Command attention during an energy emergency should insure the data accuracy.

2.3.2 Data Transmission.

As with DEIS, PEERS reporting will use the AUTODIN-I communication system wherever available. AUTODIN contains parity error detection and correction routines which are superior to those used in the teletype-based DoD message communication system. PEERS will be able to accept data from either system.

2.3.3 Automated Edits and Calculations.

Various data edits will be performed automatically when new PEERS transactions are added to the data base. All required data items will be examined to verify the presence of data. All data will be verified for format (numeric or alphabetic) and value, as specified in the PEERS data dictionary in Appendix A.

Due to the short turnaround required for PEERS reporting, extensive editing and validation will not be possible. Obvious errors and questionable data will be eliminated, but there will not be time for lengthy follow-up as in DEIS. A list of reporting errors will be submitted to each Service energy office. These offices will take appropriate action to ensure accurate data is submitted for the next reporting period (e.g., the next day or next week).

Calculations in PEERS will be limited to summary (totals) calculations. In general, these calculations will result in a whole number; however, should arithmetic operations result in more than the required accuracy, all amounts with a number greater than or equal to five in the next significant decimal place will be rounded up, and all amounts with a number less than five in that decimal position will be truncated either to two decimal places or to a whole number, as appropriate.

2.3.4 Scheduling and Timing.

PEERS scheduling and timing will depend on the frequency and extent of the reporting specified by the Defense Energy Policy Office. National emergencies, with numerous DoDAACs reporting, will require more processing, editing, and validation than a more localized emergency. The Defense Energy Office will specify an asset cut-off time and date, such as 0800 Friday, and reporting DoDAACs will measure inventory and consumption as of that time. The Energy Office will also specify a date and time by which the required DoDAAC report must be received. DLA will edit and verify to the maximum extent feasible, given the amount of data reported and the frequency of the reports. After editing, accepted data will be loaded into the PEERS data base, either the same day or overnight. The corrected data will then be edited and applied to the data base by a batch job initiated by the system operator. Much of the batch updating will be completed overnight (as AFDSC scheduling permits). Depending on the volume of update transactions, the system operator may request overnight processing or processing that should be completed within two to three hours. At this point the data will be available for on-line queries and reports. There will be very little time for processing late reports or extensive on-line editing as with DEIS. Depending on the extent of the emergency, on-line activity may be as much as eight hours per day during this emergency reporting period.

Ad hoc reports and queries will be provided within a few minutes to four hours, depending on the complexity of the request and whether the output is directed to the originating terminal or to a printer. Simple queries, such as those requiring no sorting and output of less than 500 lines, will be provided within 15 minutes under normal circumstances. Queries which result in sorting, extensive accumulation of data, and a larger amount of output will be provided within four hours.

2.4 Flexibility.

Use of a generalized DBMS is the key to PEERS. The DBMS provides the flexibility which will enable PEERS to respond to the uncertain information requirements of an energy emergency. The capability to rapidly and easily develop ad hoc reports specifically tailored for the type of emergency encountered is vital to an energy emergency information system. In addition, the DBMS will permit integration of new data elements as they become relevant to PEERS users, easy creation of on-line queries and corrections, and powerful analytical capabilities.

SECTION 3. ENVIRONMENT

This section describes the computer hardware and software capabilities required for the operation of PEERS, interface requirements with DEIS and the DLA computer center, and security and privacy considerations.

3.1 Equipment Environment.

PEERS will operate in the same environment as DEIS and use the same computer equipment and support software. Although PEERS will not require any additional hardware or support capabilities, it will require additional processing time. As with DEIS, PEERS will depend on unclassified equipment at AFDSC for the bulk of its data processing. For optimal processing using the INQUIRE DBMS, at least three separate disks should be available for data base storage of the header, search, and index files.

The size of the PEERS data base will depend on the number of DoDAACs which are required to report and also on the number of product types for which data are to be collected. In a worst-case situation, daily data for all 1400 DEIS reporters and all DEIS-I and DEIS-II products might be collected. Based on the size of the data dictionary for PEERS (see Appendix A), it is estimated that the PEERS data base could contain 60.4 million characters in this worst-case scenario. A more likely worst-case scenario would call for U.S. installations to report weekly for particular fuel types, for instance, natural gas or automotive gasolines. The data base might contain as many as 2.5 million characters in this case. These estimates do not include any overhead required by the DBMS, which may require 50 percent more disk space.

In addition to the computer mainframe, the following equipment will be utilized:

- Communications network: PEERS input data will be transmitted over AUTODIN-I or the DoD message communication network (teletype-compatible terminals) in most instances.

- DLA computer center: PEERS data will be transmitted to DLA's computer center where magnetic tapes of the data will be transmitted to the AFDSC computer.

- I/O devices: The system operator requires three to four terminals (preferably bisynchronous CRT) for entry of data and queries. In addition, the system operator needs a 300-line-per-minute printer for small error reports and queries. The Defense Energy Policy Office requires one terminal (portable, hard copy) for queries. It is expected that not more than three terminals will be accessing the PEERS data base at any one time. The equipment now used for DEIS is sufficient for PEERS.

3.2 Support Software Environment.

PEERS will require the same support software as DEIS; this software is already available at AFDSC and DLA and includes the following:

- an operating system

- a high-level programming language (COBOL)

- communications software (to monitor and ensure accuracy of data transmission)

- data base management software (INQUIRE)

- software similar to IBM's Systems Productivity Facilities (to enhance on-line editing capabilities).

This support software provides the basis for AFDSC to produce the PEERS application software.

3.3 Interfaces.

3.3.1 Interface with DEIS.

PEERS will obtain its header file data directly from the DEIS-I and DEIS-II header files for those DoDAACs required to report. In addition, PEERS will require access to DEIS for historical energy consumption data and the building, personnel, and weather data maintained in the DEIS-II data base.

INQUIRE, the DBMS under which PEERS and DEIS operate, facilitates the transfer of such data with its multi-data base capabilities. The DEIS and PEERS data bases will be connected through the common DoDAAC data element. Any updates to DEIS header data during PEERS reporting will also be processed on the PEERS header data. Current data formats for the DEIS data are specified in the DEIS System Design Specification: "DEIS-80 System Design Specifications," Logistics Management Institute, DP103, July 1982.

3.3.2 Interface with DLA.

PEERS will interface with the DLA computer center in the same manner as DEIS. The DLA computer center will provide tapes containing PEERS data submitted through AUTODIN, DoD's message communication system, or hard copy. These may include data which have undergone pre-processing by any of the Services. Service data submitted on magnetic tape will have to be in the same form as those produced by DLA for AFDSC, that is, they must contain PEERS data card images as described in Appendix B.

During an actual peacetime energy emergency the PEERS routing indicator may be changed so that data come directly to AFDSC. This would save the time needed to transmit the data from DLA to AFDSC.

3.4 Security and Privacy.

PEERS will contain no classified information and no information on individuals and, therefore, will not have any specific privacy and security requirements. Both PEERS and DEIS are unclassified systems; consequently, there will be no security considerations in transferring data from DEIS to PEERS. Procedures to ensure the integrity of the data base are discussed in the following subsection.

3.5 Controls.

Once PEERS implementation is substantially completed, the Defense Energy Policy Office will be the focal point for policy concerning operational control of the system. This office will specify:

- commencement and termination of PEERS reporting
- frequency of PEERS reports
- reporting DoDAACs
- product types to be reported under PEERS.

The Defense Energy Policy Office has also delegated the function of the Data Base Administrator (DBA) to the system operator (DFSC-CB).

The major required DBA functions are:

- review of inputs to ensure completeness and accuracy of data submissions; due to the increased frequency of reporting during an emergency, manual data edits are likely to be substantially less comprehensive than under DEIS. In a large-scale emergency with numerous reporting DoDAACs, there will be insufficient time to correct anything but the most obvious errors
- consultation with users and AFDSC to determine if data base contents or organization require change
- review of data base and system statistics
- control over initiation of update runs and restart/recovery procedures.

SECTION 4. DESIGN DETAILS

The overall requirement for PEERS is to provide DoD management with the information to respond to large-scale peacetime energy disruptions. With this as a guideline, the following requirements were developed. First, PEERS data will be maintained on an unclassified system and use a DBMS that supports on-line queries through standard data base retrieval routines. Second, the DBMS will provide the capability to add or delete data element fields when new requirements arise. Third, data entry will be easy for users yet controllable by PEERS managers. Fourth, data editing, including both format and reasonableness criteria, will provide increased accuracy. Finally, analytical capabilities will be provided to allow, on very shot notice, the development of reports tailored to a given energy emergency. The specific functions designed to meet these requirements are described in the following paragraphs.

4.1 General Operating Procedures.

4.1.1 Data Requirements.

The capability must be provided to input PEERS data on-line to the Correction File as well as from cards and card images on magnetic tape. Edit procedures will prevent double entry of data; duplicate records will be printed on an error report (called a Transaction Proof Listing).

All data submitted from a field activity will be handled as an add transaction unless data for the same date, DoDAAC, and product code exist in the data base. DFSC-CB will retain a listing of the original data submitted from the field activities for five weeks, either on the DD173 message form or a listing of validated punched cards received via AUTODIN.

4.1.2 System Scheduling Requirements.

PEERS scheduling and timing will depend on the frequency and extent of reporting. Table 4-1 summarizes the processing cycle for PEERS under some likely reporting frequencies. The Defense Energy Office will specify an asset cut-off time and date at which reporting DoDAACs will measure inventory and consumption. The Energy Office will also specify a time and date by which the required DoDAAC report must be received at DLA. DLA, in conjunction with AFDSC, will edit and verify to the maximum extent possible, given the amount of data reported and the frequency of the reports. In most instances, this editing will consist of no more than the elimination of obvious errors from the data base update file. After editing, accepted data will be loaded into the PEERS data base, either the same day or overnight. (A list of reporting errors will be submitted to each Service energy office. These offices will take appropriate action to ensure accurate data are submitted for the next reporting period.) After the data base update is complete, the PEERS data will be available for ad hoc reports and queries. The AFDSC will advise the system operator and the Energy Office of any machine or scheduling problems affecting this schedule.

4.1.3 Data Base Back-up Procedures.

A back-up of the PEERS data base will be made after each reporting cycle update. Thus, if reporting is weekly, a back-up will be made once each week. In addition, a back-up will be made of all changes to the data base since the last complete data base back-up so that the PEERS data base can be recreated if necessary. Only the most current back-up will be saved. Outdated data will be archived to magnetic tape for possible later analysis; a back-up of this tape will also be made. The archiving of outdated data will use relevant INQUIRE capabilities so that the data base can be easily recreated.

TABLE 4-1. PEERS PROCESSING CYCLE

Daily Cycle	Weekly Cycle	Responsible Party	Actions Required
1600	1600 Monday	Installation	Collect PEERS data and submit it for transmission.
0800 (next day)	0800 Tuesday	DLA	After 0800 hours, separate PEERS data, produce tape, and send to AFDSC.
1100	1200 Tuesday	DFSC-CB	DFSC-CB will work with AFDSC to run edits as required to produce an accurate data base.
As required	1700 Tuesday	AFDSC	Update data base. Send list of errors, non-reporters, and non-current data to DFSC-CB and Service energy offices.
As required	0900 Wednesday	Service energy office	Notify non-reporters, confirm non-current data.
NA	1200 Wednesday	DLA	Separate late-arriving PEERS data, and send to AFDSC.
1300	0800 Thursday	AFDSC	Update data base. Data are available for ad hoc reports.
NA	1200 Wednesday	DFSC-CB	Enter remaining corrections, and late reports. Request edit, update, report cycle, if necessary.
Weekly	Weekly	AFDSC	Delete outdated data.
As required	As required	DFSC-CB	Enter corrections to data base.

4.1.4 Recovery Procedures.

Restart and recovery procedures will conform to standard AFDSC procedures. Transaction logging, retention of PEERS data tapes, and data base back-up will permit recovery of a damaged data base. AFDSC will develop recovery actions consistent with their operating procedures.

4.1.5 Access to DEIS Data.

Occasionally, data contained in the DEIS data bases will be needed for ad hoc reports. INQUIRE capabilities can be used to access DEIS data for on-line retrieval and reporting.

4.1.6 Data Monitoring.

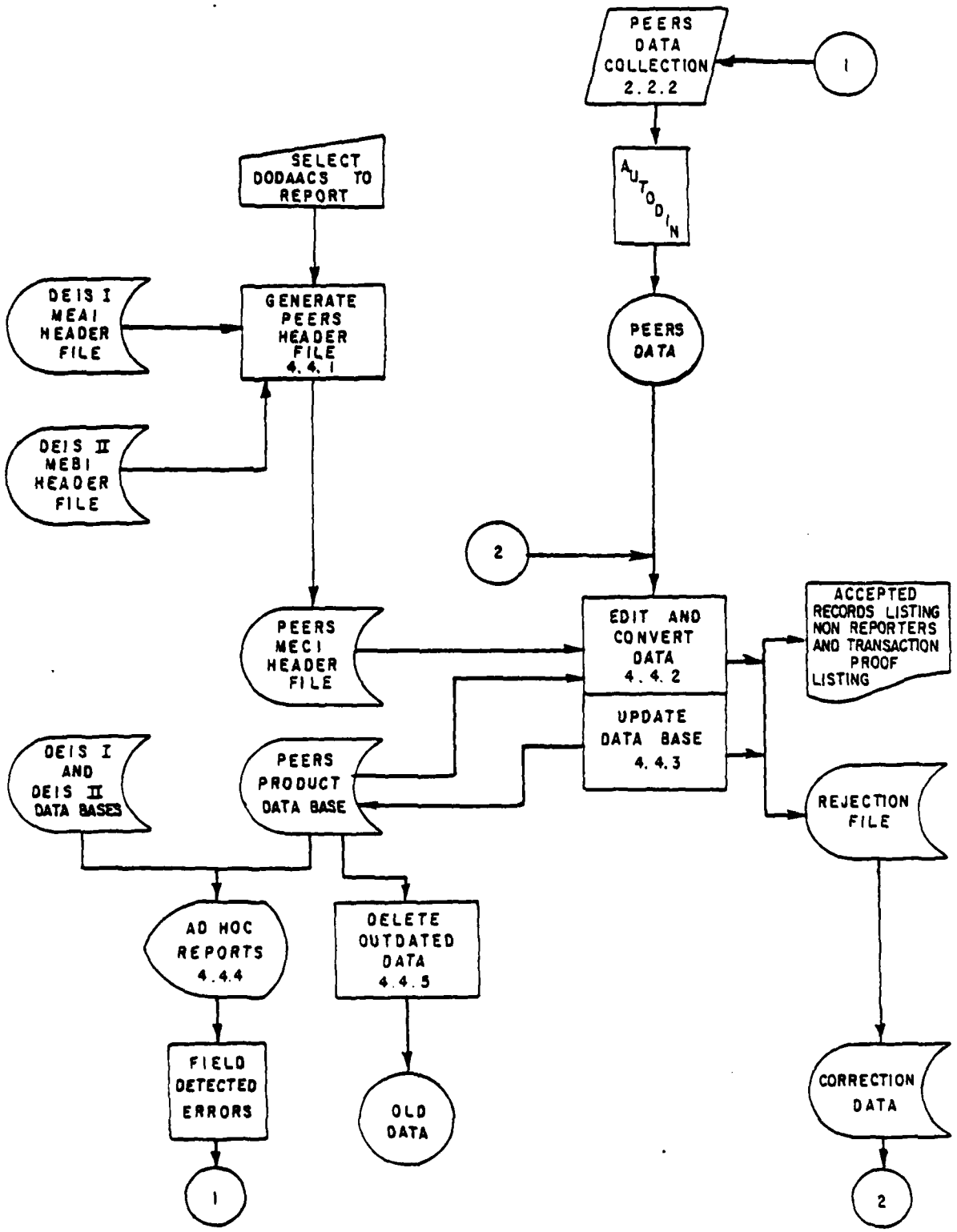
The Defense Energy Policy Office will have management responsibility for PEERS, and AFDSC will have programming responsibility. DLA will manage PEERS operations through the PEERS system operator at DFSC-CB. The PEERS system operator will be authorized direct communication with all reporting activities to request late reports and to verify reported data. DFSC-CB will also coordinate with AFDSC any changes to coded or tabular information in the data base and any changes concerning authorized users. DFSC-CB will enter data on fuels in transit and work with the Defense Energy Policy Office and AFDSC when changes to PEERS are anticipated.

4.2 System Logic Flow.

The general system flow of PEERS is designed to provide functions to process and access energy consumption and requirements data in a timely manner. Figure 4-1 illustrates the logical flow of the system. The functions numbered on the figure refer to the section of this document describing that function.

Data will enter PEERS through AUTODIN, the DD173 message form, or other communications media. The data will be collected at DLA, Cameron Station, and PEERS data will be separated from other data and recorded on magnetic tape. The PEERS data will then be transmitted to AFDSC for further processing.

FIGURE 4-1. PEERS SYSTEM FLOW



At AFDSC, PEERS data will be edited for format and validity (compared to data already in the data base). Records believed to be in error will be placed on the Rejection File for review. Records with a date older than the specified cut-off date will also be placed on the Rejection File. Those activities which have not submitted PEERS data will be identified and reported. Data which pass these edits will be converted to the INQUIRE data base format, and the data base will be updated.

If time permits, erroneous data records will be corrected and resubmitted for editing, conversion, and data base updating. Data relating to installations, such as the name and address, product names, and conversion factors, are maintained on an INQUIRE coded information file. These header files are processed and updated through DEIS.

PEERS reports will be specifically tailored to a particular energy emergency. Users will develop ad hoc reports and queries as needed and obtain them directly from the computer once the PEERS data become available. Errors in reports detected by the data submitters can be corrected via AUTODIN or the system operator (if time permits).

The data base will contain energy data for DoDAAC product usage for the most recent five to nine weeks. Five weeks of PEERS data will provide a one-week overlap of DEIS-I data; nine weeks of PEERS data will provide a one-week overlap of DEIS-II data. Any consumption data required for an earlier period can be obtained from DEIS files. Out-of-date data will be removed from the on-line PEERS data base as time permits and stored off-line on magnetic tape. These tapes will be saved for possible analysis at a later date.

4.3 System Data.

This subsection briefly describes the inputs, outputs, and data base to be used in PEERS. Additional detail on these items is provided in Section 4.4.

4.3.1 Inputs.

Inputs to PEERS will consist of input data card images submitted by reporting DoDAACS and header record information obtained from the DEIS MEA1 and MEB1 files. Appendix B provides the formats of the data cards. A description of the data elements, source, format, and acceptable values is contained in Appendix A. Data cards will be submitted by the required reporting activities according to the emergency schedule specified by the Defense Energy Policy Office in conjunction with the Services.

The PEERS header file information on each reporting DoDAAC will be obtained from the DEIS I and DEIS II header files. The records in this header file provide additional information on each reporting DoDAAC such as installation name, region, state, major command, etc. Appendix A provides definitions of these header file data elements. The coded information items contained in these files will be submitted and maintained through DEIS.

4.3.2 Outputs.

The following is a list of the reports to be generated by PEERS. More detail on the report formats is contained in the descriptions of the functions.

- Transaction Proof Listing
- PEERS Activities Not Reporting
- PEERS Activities Reporting Changes
- Ad Hoc Reports.

4.3.3 Data Base.

The PEERS data base will be constructed using the INQUIRE DBMS. Figure 4-2 shows a schema of the data base. The size of this on-line data base will depend on the extent of the DoDAAC and product reporting required for PEERS. In a worst-case scenario of a national emergency, with all DEIS

products being reported, the on-line data base would contain (not including any overhead) approximately 392,000 records of 154 characters.

FIGURE 4-2. PEERS DATA BASE SCHEMA

DoDAAC[1]	Length	
TAC	1	
Service	20	
Service Code	1	
Major Command	10	
DOE Region	28	
Region Code	2	
State/Country	28	
State/Country Code	2	
Installation Name	50	
	148	Characters per DoDAAC
Date	4	
Product Codes	3	
Closing Inventory	8	
Issues	8	
Anticipated Issues	8	
Anticipated Receipts	8	
Days of Supply	3	
Remarks	110	
Date of Update	4	
Correction Code	1	
	163	Characters per product code per date per DoDAAC

[1]Keys are underlined

4.4 System Program Descriptions.

The PEERS programs are described in the following paragraphs. These functions are presented in the sequence in which they will typically be used during a PEERS reporting cycle.

4.4.1 Generate PEERS Header File.

This function will produce a PEERS header file similar to the DEIS-I MEA1 file and the DEIS-II MEB1 file.

4.4.1.1 Purpose.

The data base design for PEERS is similar to that of DEIS in that the data will be separated into two distinct files:

- A header file containing the data elements describing the reporting installations. These data include such information as the installation name and location, Service and major command to which the activity is assigned, etc. These data are relatively static and are already maintained and updated through the DEIS system.

- A product file containing the consumption and requirements information for each DoDAAC and energy product from each PEERS report.

Separating the data into two files will reduce storage requirements and improve the performance of PEERS. The header data are already updated and maintained under DEIS; consequently, the PEERS header file can be generated from the DEIS header files by extracting the header records for only those DoDAACs required to report for PEERS. The Generate PEERS Header File function will extract header information for the appropriate installations from either the DEIS MEA1 or MEB1 files.

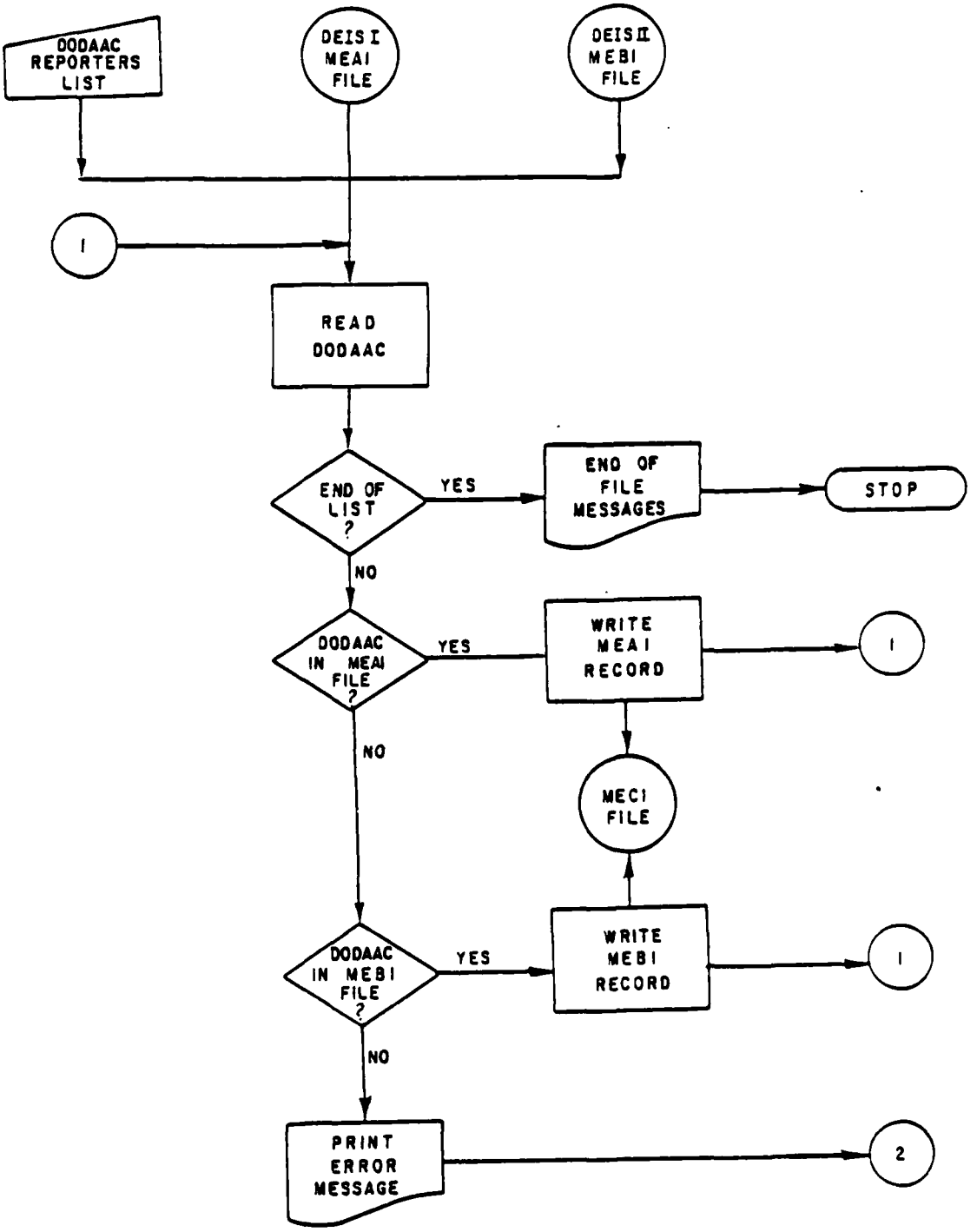
4.4.1.2 Data Definition.

The data elements to be used in the Generate PEERS Header File function are shown in Appendix A. The data definitions are identical to those of DEIS.

4.4.1.3 Processing Logic.

The Generate PEERS Header File function will use INQUIRE query capabilities to extract records from the MEA1 and MEB1 files and generate a data base containing a record for each DoDAAC required to report for PEERS. This query may consist of a list of DoDAACs or a description of the DoDAACs to be extracted, e.g., all Air Force installations in California. Figure 4-3 details the major processing steps to produce this MEC1 file. Some DoDAACs are contained in one DEIS header file and not in the other; hence, the query will have to search both files until the DoDAAC record is found.

FIGURE 4-3. GENERATE PEERS HEADER FILE



4.4.1.4 Outputs.

The output of the Generate PEERS Header File function will be a MEC1 file containing the header record information for each installation required to report under PEERS. This file will be identical in format to the MEA1 and MEB1 files.

4.4.2 Edit and Convert Data.

This function will sort the PEERS input data cards, test numeric fields, check whether the data were previously edited, check the data for reasonableness, and convert the data to the format required to update the data base.

4.4.2.1 Purpose.

The purpose of the Edit and Convert Data function is to edit/validate PEERS product information, to produce the Transaction Proof Listing of those records which fail the edit criteria, and to format the data for updating the data base.

4.4.2.2 Data Definition.

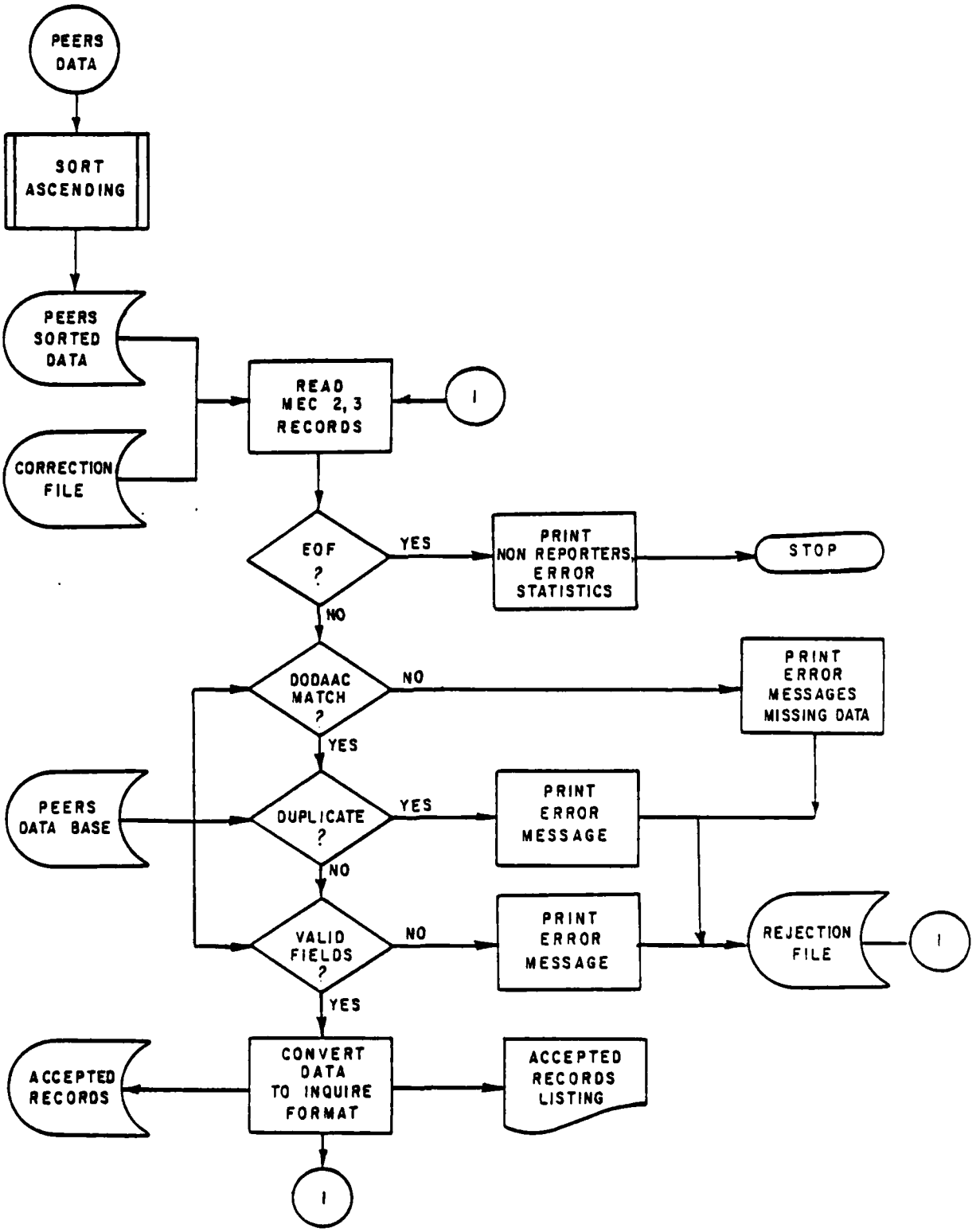
The data items required for the Data Edit and Conversion function are described in more detail in Appendix A. In this section, when the words "product record" appear, they mean all the data contained on the MEC-2/3 input cards in either card image format or another format.

4.4.2.3 Processing Logic.

Figure 4-4 is a flowchart of the major processing steps in the Data Edit and Conversion function. The first step in the conversion process will be to sort the PEERS input data cards to allow more efficient updating of the data base and editing of the data. The following data will be used in the listed sequence as sort keys:

- DoDAAC
- Reporting Date
- Product Code

FIGURE 4-4. PEERS EDIT AND CONVERT DATA



- Card Number
- Remarks Number.

Next, these sorted records will be processed through a series of edit steps which produce accepted and rejected files and various error reports. The following subsections describe the edit criteria.

4.4.2.3.1 Common Data Edits.

Due to transmission errors, the data may be offset by one column. Some of these errors are recoverable. If the blank is missing or there are two blanks between

- MEC (Card Type) and Card Number,
- Card Number and DoDAAC,
- DoDAAC and Reporting Date, or
- Reporting Date and Product Code,

the blank space will be inserted (or deleted) and the edit process will continue. These card images will be printed as they were submitted on the Transaction Proof Listing with a message that a space was inserted (deleted) and the position (card column) where the change was made. Misalignment in other fields of the input record is not recoverable. The error message for these records will indicate that the blank field is filled (and the card column) at the misalignment.

Three data elements are common to the MEC-2/MEC-3 data formats: DoDAAC, Date, and Product Code. Validation of these three elements will be as follows:

- The DoDAAC of the MEC-2/3 input must match a DoDAAC in the data base. (Before this validation occurs, all DoDAACs beginning with R or V (vessels) must first be converted to N for comparison purposes.) If the DoDAACs do not match, the record must be indicated with an error message on the Transaction Proof Listing.

- The date of a MEC-2/3 input must be less than or equal to the date of the period being reported. To facilitate this validation, the correct date may be submitted on a PARM card. If the input date is older than

the specified cut-off date, the record should be printed with an error message indicating that the change is out-of-date and placed on the Rejection File. If the input date is ahead of the correct date, the area message should indicate an invalid date.

- The Product Code on a MEC-2/3 card must match acceptable/valid product codes established on the coded information portion of the data base. Before this match is made, however, the following conversion should be accomplished. If the Product Code on the MEC-2/3 card is NFD, convert it to NDF. If the Product Code is NFS, convert it to NSF. If the Product Code is DFZ, convert it to DF2. If the Product Code is JPS, convert it to JP5. If there is a hyphen in the Product Code, remove it and shift the subsequent fields before the misalignment of the fields is checked.

If, after the above conversion and a match with valid product codes, the Product Code on the input is not valid, print the record on the Transaction Proof Listing with a message such as INVALID PRODUCT CODE and place the record on the Rejection File.

4.4.2.3.2 MEC-Specific Edits.

If the Closing Inventory and Issues fields are more than 20 percent larger or smaller than the Closing Inventory and Issues fields of the prior reporting period, a message to that effect will be printed on the Transaction Proof Listing. The MEC-2 card image and the values from the prior period also will be printed.

Each retail activity reporting will submit a MEC-2, and possibly two MEC-3 cards for each product reported. If the card has the same Reporting Date, DoDAAC, and Product Code as a record on the data base for a prior period, it will be treated as a change (see Section 4.4.2.3.3 below). Accepted transactions will be listed as discussed in 4.4.2.4. Validation of other data on the MEC-2/3 input is summarized in Table 4-2.

Every transaction will be checked for duplication of either previous reported data in the current reporting cycle or duplication of a data base record (a change transaction). If the record duplicates a record type, DoDAAC, Product Code, and Reporting Date of a record in the current cycle

TABLE 4-2. DATA EDIT ITEMS

Card	Data Element	Card Column	Validity Checks
MEC-2		22	Blank
	Closing Inventory	22-30	Numeric, non-negative, within 20% of prior week inventory
		31	Blank
	Issues	32-39	Numeric, non-negative, within 20% of prior week issues
		40	Blank
	Anticipated Issues	41-48	Numeric, non-negative
		49	Blank
	Anticipated Receipts	50-57	Numeric, non-negative
		58-79	Not used by PEERS
	Action Code	80	Blank, C(change), or D(delete)
MEC-3		22	Blank
	Remarks Number	23	Blank, 1, or 2
	Remarks	24-78	
		79	Blank
	Action Code	80	Blank, C, or D

update, an error message indicating DUPLICATE should be reflected. If all 80 columns are duplicated, the second record should be ignored. Change transactions are discussed in Section 4.4.2.3.3.

If a record entered as a change matches a record on the data base exactly (all 80 columns), ignore the new record and print no error message. If an add transaction being input matches a record on the data base on DoDAAC, Product Code, and Reporting Date, print an error message DUPLICATE. Print this product record error together with the master record. Identify the master record on the listing with a FROM DATA BASE message. Place the input product record on the Rejection File. Section 4.4.2.3.3 will expand further on these "changes".

All numeric quantity fields on the MEC-2/3 will be validated. If the field is not numeric, print the product record with a message such as FIELD NOT NUMERIC.

All product records in error will be printed on the Transaction Proof Listing and written on the Error File. Product records containing an error will update the data base if they have been previously edited and contain an "E" in column 79 (see on-line correction function). The MEC-2/3 data will be printed for each product record in error.

4.4.2.3.3 Change Transaction Edits.

Change transactions (a matching record in the data base for a previous reporting period) may be submitted from the field activities or by the system operator. These transactions must match a record in the data base on DoDAAC, Product Code, and Date. If no match is found, print a message beside the transaction on the Transaction Proof Listing stating UNMATCHED. The entire contents of a card will be submitted for a change of a field on that card.

New zero entries will replace existing entries provided they pass the edits. A set (MEC-2/3) is not necessary for a change transaction. If the change matches a data base record, overlay the old data with the new data. This overlay will not, however, be accomplished before all of the validation identified for an add transaction is performed. If the change data fail the edits, reject the new data, print the data as an error on the Transaction Proof Listing, and place it on the Rejection File.

4.4.2.3.4 Delete Transaction Edits.

Delete transactions (CC 1-5 = MEC-2 and CC 80 = D) must match on the DoDAAC, Date, and Product Code. If an exact match does not occur, print the transaction on the Transaction Proof Listing with a message such as UNMATCHED and place the transaction on the Rejection File. If there is an exact match,

delete the master record. Beside the transaction on the Transaction Proof Listing, print MASTER DELETED and the data which were deleted.

4.4.2.3.5 Non-Reporting Activities Edits.

Those activities (DoDAACs) in the data base for which no data (no MEC cards) were received should be printed on the PEERS Activities Not Reporting listing. A listing will also be provided showing the activities not reporting the same products reported in the previous cycles.

The listings will indicate the Region Code, State/Country Code, Installation Name, Major Command, and Service/Agency Code for each DoDAAC. These data will be taken from the coded information file.

For those activities reporting changes in products used, the Product Code will be determined as follows: if no (MEC-2) data are submitted for a Product Code reported on the previous report, reflect this unreported product along with the anticipated receipts of the previous report.

4.4.2.3.6 Conversion.

Data will be converted from MEC card format to the format required for INQUIRE data base updating.

4.4.2.4 Outputs.

There will be seven outputs from the Edit and Convert Data function:

- Records which have passed the data edits and are converted to INQUIRE data base update format will update the data base. As many as 2000 records (MEC-2/3 combination) may pass the data edits at one time.

- Records which have passed the data edits will be printed on the Accepted Records Listing in DoDAAC order within each Service. A sample of this report layout is given in Figure 4-5.

- Records which fail the data edits will be written on the Rejection File. As many as 1000 records may fail the data edits at one time. Because of this volume, this file should be arranged for selective as well as sequential access.

- Records which fail the data edits will be printed on the Transaction Proof Listing in DoDAAC order within each Service. This listing will

FIGURE 4-5. ACCEPTED RECORDS LISTING

```
RUN ON DD MMM YY                    ACCEPTED RECORDS                    PAGE XXX
                                REPORT DATE:  XX XXX 19XX


          CARD              1111111111122222222233333333334444444444555555555556
          COLUMN      12345678901234567890123456789012345678901234567890123456789

                      MEC 2 FP6356 0207 JP4 00000201 00000025 00000030 00000020
                      MEC 3 FP6356 0207 JP4 1SERIOUS DEFICIENCIES


RUN ON DD MMM YY                  TRANSACTION PROOF LISTING             PAGE XXX

                          ERRORS FOR REPORT DATE:  XX XXX 19XX


          CARD              1111111111122222222233333333334444444444555555555556
          COLUMN      12345678901234567890123456789012345678901234567890123456789

                      MEC  2 W38XDD 0207 MGR 00000000 00Q00000 00Q00000 00000000      MISALIGNMENT CORRECTED
                      MEC 2 N52703 0207 DFM 00000000 00000000 00000000 00000000       INVALID QTY (POS 41-45)
```

contain the images of the records on the Rejection File and the appropriate error messages (specified in 4.4.2.3). Multiple error messages may be printed. A sample of this report layout is also given in Figure 4-5. A listing for each Service will be sent to each Service energy office. The Service energy office will be responsible for taking action to ensure the accuracy of submissions for the next reporting cycle.

- Activities which did not submit data will be reported on the PEERS Activities Not Reporting listing. Page breaks are needed only when the print limitation of the page is reached. The total number of activities not reporting, by MEC type, will be printed at the end of the report. A sample of this report layout is given in Figure 4-6.

- PEERS Error Statistics giving the number of times each error message is printed will be printed at the end of each edit run. This listing will be sent to the system operator. A sample of this report layout is given in Figure 4-7.

4.4.3 Update Data Base.

This function will be performed mainly through the generalized DBMS capabilities and will provide for applying records with correct data to the data base. The data base update will occur at least once each reporting cycle. Since there will be very little time to correct errors and add late reporters, the update will probably occur no more than twice each reporting cycle.

4.4.3.1 Purpose.

The purpose of the Update Data Base function is to add, change, and delete data in the product data base. This includes the ability to add new data fields or delete existing ones by reorganizing the data base. Fields will be added or deleted infrequently and only after consultation with AFDSC. Records with data items found to be in error during the update will be placed on the Rejection File, for on-line editing of the error records (if time permits).

4.4.3.2 Data Definition.

The data items input to the Update Data Base function are shown in Table 4-3. A more detailed description of each data item can be found in Appendix A.

FIGURE 4-6. PEERS ACTIVITIES NOT REPORTING

PEERS MONTHLY ACTIVITIES NOT REPORTING
REPORT DATE: XX XXX 19XX

RUN ON DD MMM YY PAGE XXXXX

DODAAC	PRODUCT CODE	REGION CODE	STATE CODE	INSTALLATION NAME	PRIOR INVEN.	MAJOR COMMAND	SVC	MESSAGE
XXXXXXX	XXX	XX	XX	XXX----------	XXX	XXXXXXXXXX	X	NO MEC DATA
	XXX							
	XXX							
XXXXXXX								

FIGURE 4-7. PEERS ERROR STATISTICS

RUN ON DD MMM YY

PEERS ERROR STATISTICS

DODAAC	NUMBER OF CARDS PROCESSED	NUMBER OF ERROR MESSAGES	NUMBER OF CHANGED RECORDS IN ERROR
XXXXXXX	XXXXX	XXXXXX	XXXXXX

TABLE 4-3. DATA BASE UPDATE DATA ITEMS

Data Element Name	Comments
DODAAC	DoD Activity Address Code
RPTDATE	Reporting Date (Month, Day)
PRODCODE	Product Code
ISSUES	Total Issues/Consumption
AISSUES	Anticipated Issues/Consumption
ARECPTS	Anticipated Receipts
DAYSUP	Days of Supply
DTEUP	Date of Update
CORRECT	Correction Code

4.4.3.3 Processing Logic.

Those records that passed the edits described in 4.4.2 will be applied to the PEERS data base. In addition, Days of Supply will be calculated as follows: Days of Supply = Inventory ÷ Anticipated Consumption ÷ Number of Days in the Reporting Cycle. Days of Supply will be truncated to a whole number, that is, if the calculation yields 4.9 days of supply, 4 will be placed in the data base. The input records will be saved as a transaction log. Any data rejected by INQUIRE at this stage will also be placed on the Rejection File for subsequent data correction if possible.

4.4.3.4 Output.

The outputs of the Update Data Base function will be an updated PEERS data base and the Rejection File. The data to be written on the Rejection File will be converted to MEC card image format for ease of user correction.

4.4.4 Generate Ad Hoc Reports.

This function will provide macros to extract data from the PEERS data base.

4.4.4.1 Purpose.

Reporting flexibility is a key requirement of an emergency information system. The INQUIRE DBMS provides the analytical capabilities to allow, on

very short notice, the development of reports tailored to a specific emergency. These ad hoc reports will be used to assess the severity of energy shortages, provide feedback on energy conservation efforts, and answer Congressional and Department of Energy information requests. Figure 4-8 provides a sample of the type of ad hoc reports which can be easily produced using the INQUIRE query capabilities.

4.4.4.2 Data Definition.

All fields contained in the data base (see Appendix A) may be used in producing the reports.

4.4.4.3 Processing Logic.

The queries to generate the ad hoc reports will simply retrieve certain data elements, based on user-specified selection criteria, and display the data. At times, simple arithmetic operations on the data may be requested. The macros will assign any required files, invoke the appropriate processors, and assist the user in creating and saving the query statements.

4.4.4.4 Output.

Output will be printed on the originating terminal, directed to another (high-speed) printer, or saved in a file for further processing. At the user's option, the statements used to generate the query may be saved for future use and modification.

4.4.5 Delete Outdated Data.

After the time-sensitive processing of PEERS data is complete, data base maintenance will be performed by deleting outdated data. Records will be deleted from the on-line data base when their reporting date is older than the most current DEIS report. Depending on the time of the month and products reported, the PEERS on-line data base could include as many as five to nine weeks of PEERS reports. The deleted PEERS records will be archived on magnetic tape.

FIGURE 4-8. SAMPLE AD HOC REPORTS

For OSD

DEPARTMENT OF DEFENSE
SUPPLY STATUS

MOTOR GASOLINES

DOE REGION	INVENTORY	DAYS OF SUPPLY	ANTICIPATED RECEIPTS
1			
2			
3			
.			
.			
.			
TOTALS	_____	_____	_____

For Services

U.S. ARMY
COMMAND STATUS REPORT

FUEL OIL

MAJOR COMMAND	INVENTORY	DAYS OF SUPPLY	ANTICIPATED ISSUES	ANTICIPATED RECEIPTS
DARCOM				
FORSCOM				
TRADOC				
.				
.				
.				
TOTALS	_____	_____	_____	_____

For Service Control Points

USAF
MIDWEST STATES

NATURAL GAS

	INSTALLATION	PRIOR CONSUMPTION	DAYS OF SUPPLY	ANTICIPATED ISSUES	ANTICIPATED RECEIPTS	REMARKS
Illinois	Chanute AFB					
	Scott AFB					
	O'Hare					
Indiana	Grissom AFB					
Michigan	K.I. Sawyer AFB					
	Wurtsmith AFB					
Minnesota	Minneapolis AP					

4.4.5.1 Purpose.

This deletion process provides a method for minimizing processing time and data storage requirements. Only PEERS reports since the date of the last complete DEIS report will be needed in the PEERS data base; DEIS would provide the inventory and consumption data previous to that date, and anticipated consumption and receipts are needed only from the most recent PEERS report. The most recent PEERS report will always be retained in the on-line data base.

Data deleted from the PEERS product data base will be archived on magnetic tape in a format that allows easy creation of a data base for a specified time period. These historical data will provide a means for assessing the accuracy, validity, and completeness of PEERS data at some later date and possibly suggest methods for improving PEERS procedures. This function will also supplement AFDSC procedures to back-up the on-line data base.

4.4.5.2 Data Definition.

PEERS data items used in the Delete Outdated Data function will include the reporting date (for selection purposes) and all data elements in the product data base. The data of the most recent DEIS and PEERS reports will also be needed. The PEERS data items are described in Appendix A.

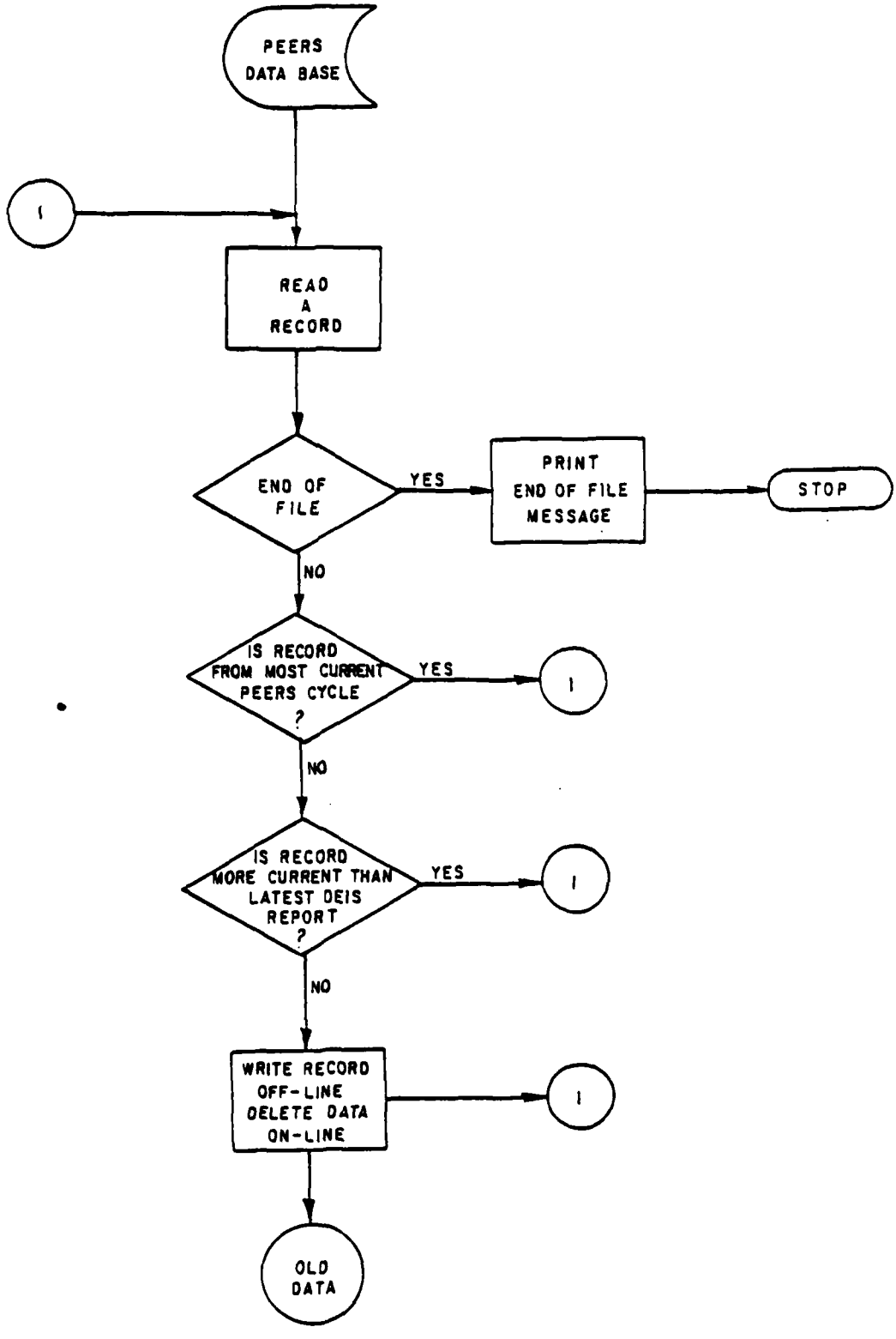
4.4.5.3 Processing Logic.

The procedure for the Delete Outdated Data function will consist of a simple scan of the PEERS product base comparing the reporting date of each record to the oldest of either the most recent DEIS or PEERS reports. Records older than this date will be copied to archival storage and deleted from the on-line data base; the remaining records will be retained in the on-line data base. Figure 4-9 shows the major processing steps of this function.

4.4.5.4. Outputs.

The outputs of the Delete Outdated Data function will be an updated PEERS product data base and an INQUIRE-format archival file of the records purged.

FIGURE 4-9. DELETE OUTDATED DATA



APPENDIX A

DATA DICTIONARY

This description of PEERS data items is separated into two categories, product data and header data. These data are maintained in two separate files. Product data are defined as the information submitted by reporting DoD activities on the MEC-2/3 cards (see Appendix B for formats of these cards). These data are submitted with each reporting period and contain the inventory and consumption data for each energy product. The header data consist of those data elements which describe a DoD activity such as installation name, region, major command, Service, etc. These data elements are identical with the header data contained in DEIS-I MEA1 and DEIS-II MEB1 files.

Within each category, the elements are listed in alphabetical order. The format type, length (number of characters), source, number of occurrences, frequency of update or submission, definition, and edit criteria are given for each data element. The product data are shown in Table A-1. The header data are shown in Table A-2.

TABLE A-1

PEERS PRODUCT DATA

Element Name	Format Type	Format Length	Source	Required	Number of Occurrences	Frequency of Update/ Submission	Edit Criteria	Description/Alias
CARDNO	N	1	MEC cc 5	Yes	1 per Card	NA	2, 3, or 4	Not kept in DB
CARDTY	A	3	MEC cc 1-3	Yes	1 per Card	NA	MEA	Not kept in DB
CLOSINV	N	8	MEC 2 cc 23-30	Yes	1 per Product Code, per DoDAAC	As Needed	Numeric, positive	Closing Inventory
AISSUES	N	8	MEC 2 cc 41-48	Yes	1 per Product Code, per DoDAAC	As Needed	Numeric, positive	Anticipated Issues
ARECPTS	N	8	MEC 2 cc 50-57	Yes	1 per Product Code, per DoDAAC	As Needed	Numeric, positive	Anticipated Receipts
DoDAAC	AN	6	MEC cc 7-12	Yes	1 per Card, up to 1400 unique codes	As Needed	Valid code file	DoD Activity Address Code, UIC, Base/ Facility ID
ISSUES	N	8	MEC 2 cc 32-39	Yes	1 per Product Code, per DoDAAC	As Needed	Numeric positive	All fuel issued or consumed
PRODCODE	AN	3	MEC cc 14-17	Yes	Up to 43 per DoDAAC	As Needed	Valid code on file	Product Code
REMARKNO	AN	1	MEC 3 cc 23	No	1 per Card	As Needed	1 or 2	Remarks card number; not kept in DB
REMARKS	AN	110	MEC 3 cc 24-78	No	1 per Product Code, per DoDAAC	As Needed	No edits	Optional Remarks
RPTDATE	AN	4	MEC cc 14-17	Yes	1 per Card	As Needed	Month (01 to 12) and Day (01 to 31)	Reporting date
TAC	N	1	MEC cc 13	No	1 per Card	As Needed	Blank or 9	DFSC Facility

TABLE A-2

PEERS HEADER DATA

Element Name	Format Type	Format Length	Source	Required	Number of Occurrences	Frequency of Update/ Submission	Edit Criteria	Description/Alias
DISTRIB	AN	4	DBA	Yes	25	As Needed		Distribution Code
DoDAAC	AN	6	DoD 4000.25D	Yes, if it consumes energy	1400	As Needed		DOD Activity Address Code UIC, Base/Facility ID
DoDC	A	1	DBA	No	1 per DoDAAC	As Needed	Blank, A,C, or D	DoDAAC action code
INSTALL	AN	50	Services	Yes	1 per DoDAAC	As Needed		Installation Name
MAJCOM	AN	10	Services	Yes	1 per DoDAAC	As Needed		Major Command
REGION	AN	28	Table 4-6	Yes	18	As Needed		Region/CINC Name
REGIONC	AN	2	Table 4-6	Yes	18	As Needed	Valid Code	Region/CINC Code
SERVICE	A	20	Table 4-7	Yes	9	As Needed		Service/Agency Name
SERVICEC	A	1	Table 4-7	Yes	9	As Needed	Valid Code	Service/Agency Code
SHIPDTE	N	4	DBA	No	< 106	As Needed	9 or Blank	Date ship is to be returned to service
STATE	A	28	Table 4-6	Yes	120	As Needed		State/Country
STATEC	AN	2	Table 4-6	Yes	120	As Needed	Valid Code	State/Country Code
TAC	N	1	DBA	No	< 100	As Needed	9 or Blank	DFSC facility

APPENDIX B

DATA COLLECTION CARD FORMATS

This appendix contains the card layouts for the PEERS input data card(s) submitted by the reporting activities. A MEC-2 input card is submitted for each product for which reporting is required. Up to two MEC-3 cards, containing the optional REMARKS data element field, may be submitted along with each MEC-2 card.

TABLE B-1

PEERS - MEC-2 CARD LAYOUT

Field Length	Card Column	Data Description
3	1 - 3	Card Type (MEC)
1	4 - 4	Blank
1	5 - 5	Card Number (2)
1	6 - 6	Blank
6	7 - 12	DoDAAC
1	13 - 13	Blank
2	14 - 15	Reporting Date (Month)
2	16 - 17	Reporting Date (Day)
1	18 - 18	Blank
3	19 - 21	Product Code
1	22 - 22	Blank
8	23 - 30	Closing Inventory
1	31 - 31	Blank
8	32 - 39	Total Issues/Consumption
1	40 - 40	Blank
8	41 - 48	Anticipated Issues
1	49 - 49	Blank
8	50 - 57	Anticipated Receipts
23	58 - 80	Blank

TABLE B-2

PEERS - MEC-3 CARD LAYOUT

Field Length	Card Column	Data Description
3	1 - 3	Card Type (MEC)
1	4 - 4	Blank
1	5 - 5	Card Number (3)
1	6 - 6	Blank
0	7 - 12	DoDAAC
1	13 - 13	Blank
4	14 - 15	Reporting Date (Month)
2	16 - 17	Reporting Date (Day)
1	18 - 18	Blank
3	19 - 21	Product Code
1	22 - 22	Blank
1	23 - 23	Remarks Number
55	24 - 78	Remarks
4	79 - 80	Blank

APPENDIX C

CODED DATA BASE ITEMS

Part of the PEERS data base consists of data elements which are coded information representing regions, states, services, products. These PEERS codes are identical to those used in DEIS. This appendix provides a set of tables which translate these various codes. Table C-1 is a list of PEERS coded data elements. Table C-2 contains the translations of region codes and state/country codes used in describing DoDAAC locations. Table C-3 contains translations of Service/agency codes used for describing DoDAACs. Petroleum product codes are contained in Table C-4 and utility products in Table C-5.

TABLE C-1

CODED DATA BASE ITEMS

Data Element Description	EDIT Criteria/Comments
DoDAAC	Cannot be blank or zero. Must match a DoDAAC in the file.
TAC	Nine or blank
Region Code	Cannot contain blanks or be zero. Must match a code in Table 4-6. Two characters long.
State/Country Code	Cannot contain blanks or be zero. Must match a code in Table 4-6. Two characters long.
Installation Name	Cannot contain only blanks.
Major Command	Cannot contain only blanks.
Service/Agency Code	Must be A, B, F, H, N, M, D, S, or T.
Product Code	Cannot contain blanks or zeros. Must match a code in Table 4-8. Three characters long.

TABLE C-2

REGION/STATE/COUNTRY CODES[1]

REGION/CINC	REGION CODE	STATE/COUNTRY CODE
REGION 1	01	
Connecticut	01	09
Maine	01	23
Massachusetts	01	25
New Hampshire	01	33
Vermont	01	50
Rhode Island	01	44
REGION 2	02	
New Jersey	02	34
New York	02	36
REGION 3	03	
Delaware	03	10
District of Columbia	03	11
Maryland	03	24
Pennsylvania	03	42
Virginia	03	51
West Virginia	03	54
REGION 4	04	
Alabama	04	01
Florida	04	12
Georgia	04	13
Kentucky	04	21
Mississippi	04	28
North Carolina	04	37
South Carolina	04	45
Tennessee	04	47
REGION 5	05	
Illinois	05	17
Indiana	05	18
Michigan	05	26
Minnesota	05	27
Ohio	05	39
Wisconsin	05	55

[1]The region table will have the region code and the region/CINC name. The state table will have the state code, the region code and the state name.

TABLE C-2 (Cont.)

REGION/CINC	REGION CODE	STATE/COUNTRY CODE
REGION 6	06	
Arkansas	06	05
Louisiana	06	22
New Mexico	06	35
Oklahoma	06	40
Texas	06	48
REGION 7	07	
Iowa	07	19
Kansas	07	20
Missouri	07	29
Nebraska	07	31
REGION 8	08	
Colorado	08	08
Montana	08	30
North Dakota	08	38
South Dakota	08	46
Utah	08	49
Wyoming	08	56
REGION 9	09	
Arizona	09	04
California	09	06
Nevada	09	32
REGION 10	10	
Idaho	10	16
Oregon	10	41
Washington	10	53
CINCs[2]		
CANADA & GREENLAND		
Western Canada	3X	CA
Argentia, Eastern Canada	3D	CA
Greenland	3E	GL
CINCAL		
Alaska	1A	02
Aleutian Islands	1B	02

[2]When multiple codes appear in a CINC, each code will have its own region name.

TABLE C-2 (Cont.)

REGION/CINC	REGION CODE	STATE/COUNTRY CODE
CINCSOU		
Canal Zone	6A	PQ
Easter Island (Chile)	6A	CI
CINCEUR		
Belgium	4K	BE
Crete (Greece)	4Q	GR
Cyprus	4Q	CY
Denmark	4K	DA
France	4M	FR
Germany	4K	GE
Italy	4P	IT
Malta	4S	MT
Morocco	4R	MO
Netherlands	4K	NL
Norway	4J	NO
Sardinia	4P	SD
Sicily	4P	SI
Spain	4N	SP
Portugal	4N	PO
Turkey	4Q	TU
United Kingdom (Great Britain & Northern Ireland, including Channel Islands)	4L	UK
MISCELLANEOUS		
Ceylon	7F	CE
Egypt	7C	EG
Eritrea (Ethiopia)	7C	ET
Kenya	7C	KE
Lebanon	7D	LE
Saudi Arabia	7D	SA
CINCLANT		
Ascension Island	2R	SH
Azores	2K	AZ
Bermuda	2D	BD
Cuba	2C	CU
Haiti	2C	HA
Iceland	2H	IC
Puerto Rico	2C	RQ
Virgin Islands	2C	VQ
West Indies--includes		
Leeward Islands	2C	LW
Windward Islands	2C	WI
Jamaica	2C	JM
Dominican Republic	2C	DR
Netherlands West Indies	2C	NA
Trinidad	2C	TD

TABLE C-2 (Cont.)

REGION/CINC	REGION CODE	STATE/COUNTRY CODE
CINCPAC		
Australia	5E	AS
Diego Garcia	5S	MR
Hawaii	5N	15
Japan	5H	JA
Johnston Island	5N	JQ
Korea	5H	KS
Laos	5D	LA
Marianas Islands	5G	MS
Marshall Islands (Pacific Islands)	5B	TQ
Midway Island	5N	MQ
New Zealand	5V	NZ
Philippines	5C	RP
Ryukyu Islands	5H	YQ
Samoa Islands	5F	AQ
Taiwan	5C	TW
Volcano Islands	5G	BJ
Wake Island	5F	WQ
South Vietnam	5D	VS
Thailand	5D	TH
Malaysia	5D	MY
Singapore	5D	SN
VESSELS	98	98

TABLE C-3

SERVICE/AGENCY CODES

Code	Translation[1]
A	Army
B	Army National Guard
F	Air Force
H	Air National Guard
N	Navy
M	Marine Corps
D	DFSC
S	DLA
T	Other DoD Agencies

[1]When summarizing Army, include both "A" and "B"
When summarizing Air Force, include both "F" and "H"

TABLE C-4

PETROLEUM PRODUCT CODES

Aviation Gasoline [1]	**Distillates**
130	DFM
131	DFW
135	DF1
145	DF2
887	DFA
996	DFB
	NDF
Jet Fuel - JP4	DFS
	SFM
JP4	
JR1	**Fuel Oil Distillates**
JAA	
JAB	FS1
JA1	FS2
SP4	KSN
	KSD
Jet Fuel - JP5	
	Fuel Oil Residuals
JP5	
JK2	FS4
SP5	FS5
	FS6
Jet Fuel - FP8	FSL
	SS6
JP8	
	Gasohol
Residuals	
	GUS
NSF	GUP
	GUR
Autmotive Gasoline	
	Slop
MG1 MUR	
MG2 MUP	SLP
MGP MLL	FOR
MGR MLP	
MGU MLR	**Other**
MUS MG3	
	SII
	PPG
	SCR

[1]Each product code has a Product Category name associated with it.

TABLE C-5

UTILITY PRODUCT CODES

Product	Product Code
Electricity	ELC
Natural Gas	NAG
Coal (Bituminous)	COL
Coal (Anthracite)	ANC
Purchased Steam/ Hot Water	SHW
Fuel Oil-Distillate	DF1, DF2, FS1, FS2, KSN, KDS, NSF
Fuel Oil-Residual	FS4, FS5, FS6, FSL
Fuel Oil-Mixed	FSX
Photovoltaic	PHO
Solar Thermal	SOL
Wind Power	WND
Wood	WUD
Geothermal	GEO
Geothermal Electricity	GLC
Propane, Butane, LPG	PPG
Refuse-Derived Fuels	RDF
Hydroelectric	HYD
Fuel Oil Reclaimed	FOR

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This document contains the system specification for a standby peacetime energy emergency reporting system to supplement data from the Defense Energy Information System (DEIS) when necessary. The system specified would use the same files and processing flows as the DEIS, but would contain only selected data pertaining to consumption and receipts. The system would be involked on an as-needed basis at either a local or national level for those energy products of concern.

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